

REMARKS

Claims 1, 4, 5 and 21 are currently amended and claims 2, 3, 22, 24 and 31-43 are canceled. Claims 1, 4-21, 23, and 25-30, therefore, remain pending in the application. Applicant respectfully traverses the Office's rejections and, in view of the foregoing amendments and the following remarks, respectfully requests that the Office issue a Notice of Allowance. The amendments are supported by the specification and do not introduce new matter.

35 U.S.C. § 101 Rejections

Claims 21-30 stand rejected under 35 U.S.C. § 101 for allegedly being directed to non-statutory subject matter. Applicant respectfully disagrees. Nevertheless, without conceding the propriety of the rejection and for the sole purpose of expediting allowance, Applicant has amended claim 21 to recite "means for storing one identifier in memory". During the aforementioned interview, Applicant's attorney understood the Office to agree that if Applicant were to make such an amendment, the Office would withdraw the 35 U.S.C. § 101 rejection. Applicant sincerely thanks the Office for this indication.

35 U.S.C. §§ 102 and 103 Rejections

Claims 1-4, 6-28, and 30 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Hanson et al. (U.S. Patent No. 6,546,425, hereinafter "Hanson").

Claims 5 and 29 stand rejected under 35 U.S.C. § 103(a) as being obvious over Hanson in view of Bruan et al. (US Patent No. 6,047,283, hereinafter "Bruan").

Applicant respectfully traverses the rejections. Nevertheless, Applicant has amended the independent claims in the manner discussed during the interview for the sole purpose of expediting allowance and without conceding the propriety of the Office's rejections.

The Claims

Independent Claim 1, as amended, recites an end host comprising. (added language underlined):

- a memory including:
 - executable instructions;
 - storage for respective identifiers for respective peers of the end host in a peer-to-peer system, wherein the storage comprises:
 - a multilevel routing table cache (MRTC),
 - each level in the MRTC has a maximum number of entries,
 - each level in the MRTC represents a segment of a number space corresponding to an identifier of the end host,
 - the top level of the MRTC spans the entire number space,
 - each successively lower level contains successively smaller spans,
 - each said span in a level below the top level is a smaller segment than the entire number space,
 - each said span is clustered around one said identifier of a corresponding said peer, and
 - the relative proximity between the peers corresponds to the respective identifiers thereof; and
 - an array for each said peer of the end host, wherein:
 - each said array includes one of more entries; and
 - each said entry:
 - corresponds to one neighbor peer of one peer of the end host (NPOP); and

- includes an identifier for the NPOP;
- a processor for executing the executable instructions which, when executed, interacts with the end host as a peer in a peer-to-peer fashion in the peer-to-peer system, the interacting comprising:
 - when a message is to be sent from the end host to a destination said peer having an identifier not found in the MRTC:
 - forming a message for a destination said peer for which the identifier thereof is not found in the MRTC, wherein the message includes the identifier of the destination said peer; and
 - addressing the message to an intermediate said peer for which the identifier thereof:
 - is in the memory; and
 - is the proximally closest to the identifier of the destination said peer.

In making out a rejection of this claim before its amendment, the Office alleges that Hanson anticipates. Applicant respectfully disagrees. Nevertheless, for the sole purpose of expediting allowance and without conceding the propriety of the Office's rejections, Applicant has amended claim 1.

Applicant respectfully submits that Hanson has not been shown to disclose or suggest:

- when a message is to be sent from the end host to a destination said peer *having an identifier not found in the MRTC:*
 - forming a message for a destination said peer *for which the identifier thereof is not found in the MRTC*, wherein the message includes the identifier of the destination said peer; and
 - addressing the message to an intermediate said peer for which the identifier thereof:
 - is the proximally closest to the identifier of the destination said peer.

Claim 1 (emphasis added).

Instead, Hanson is directed to “enabling existing network applications to run reliably in mobile environments.” Hanson, abstract. Specifically, Hanson discusses “[m]aintaining a continuous virtual connection even though it may temporarily lose its actual physical connection”. Hanson, col. 2 lines 64-67. Furthermore, Hanson states:

A Mobility Management Server coupled to a mobile network *maintains the state* of each of any number of Mobile End Systems and *handles the complex session management* required to maintain persistent connections to the network and to other peer processes. If a Mobile End System becomes unreachable, suspends, or changes network address (e.g., due to roaming from one network interconnect to another), the Mobility Management Server maintains the connection to the associated peer task – allowing the Mobile End System to maintain a continuous connection even though it may temporarily lose contact with its network medium. Hanson, abstract (emphasis added).

* * *

This proxying by the Mobility Management Server allows the application on the Mobile End System to *maintain a continuous connection even though it may temporarily lose its physical connection* to a specific network medium. Id. at col. 3 lines 29-33 (emphasis added).

The problem solved by Hanson is thus maintaining the state associated with a connection between the Mobility End System (MES) and the Mobility Management Server (MMS).

Hanson assumes that the location on the network of the MMS is known – a MES that has disconnected from the MMS simply re-connects using the MMS’s known address. This knowledge of the MMS’s address is inherent in the client-server relationship – the address of the server is fixed and is thus known by the MES upon reconnecting.

In contrast, peer-to-peer networks are defined by not having a central server with a known address that clients can simply re-connect to. Instead, peers on a peer-to-peer network may change their network address or disconnect entirely from the network, preventing other peers from directly connecting to a peer with a known name that has a new network address. Specifically, a source peer may comprise an identifier of a destination peer, but the source peer's multilevel routing table cache (MRTC) may not have a current entry for the destination peer's identifier.

Hanson discusses reconnecting to a MMS server, but reconnecting to an MMS server utilizing a known server address is not “forming a message for a destination said peer *for which the identifier thereof is **not found in the MRTC***,” as recited in Applicant's claim 1. That is, a known server address is indeed known. Thus, Hanson has not been shown to disclose an “identifier [that] is not found in the MRTC.” Therefore, Hanson does not disclose or suggest “forming a message for a destination said peer for which the identifier thereof is not found in the MRTC ... and addressing the message to an intermediate said peer for which the identifier thereof: is the proximally closest to the identifier of the destination said peer,” as recited in Applicant's claim.

Applicant respectfully submits that claim 1 recites the elements previously recited in claim 3 and intervening claim 2. Accordingly, Applicant respectfully submits that any subsequent Office Action (other than a Notice of Allowance) should remain Non-Final. *See* 37 CFR §1.113, MPEP §706.07(a).

For at least these reasons, claim 1 is allowable.

Claims 4-20 depend from claim 1 and, are allowable by virtue of this dependency. Claims 4-20 are also allowable for their own recited features, which the references of record have not been shown to disclose, teach, or suggest.

Independent Claim 21, as amended, recites a peer to peer system comprising first and second means for interacting as respective peers in a peer-to-peer fashion in a peer-to-peer system, wherein each said first and second means respectively has (added language underlined):

- one or more close peers in the peer-to-peer system, wherein each said close peer has one or more neighbor peers (NP);
- means for storing one identifier in memory for each of the one or more close peers; and
- means for storing an array for each said close peer, wherein:
 - each said array includes one [[of]] or more entries; and
 - each said entry:
 - corresponds to one said NP; and
 - includes an identifier for the NP;
- wherein the first and second means are close peers one to the other;
- when the IP address of the first means changes so as to cause a break in an on-going communication between the first and second means for longer than a predetermined threshold, each of the first and second means further comprises:
 - means for addressing a message for transmission to each NP of each close peer of the other of the first and second means for delivery of the message thereto via each NP, wherein the message includes the changed IP address thereof; and
 - means for:
 - receiving the message via the NP;

- extracting the changed IP address of the other of the first and second means from the message; and
- resuming the on going communication using the changed IP address of the other of the first and second means.

In making out a rejection of this claim before its amendment, the Office alleges that Hanson renders claim 21 obvious. Applicant respectfully disagrees. Nevertheless, for the sole purpose of expediting allowance and without conceding the propriety of the Office's rejections, Applicant has amended claim 21.

Applicant respectfully submits that Hanson does not disclose or suggest:

each of the first and second means further comprises:
means for addressing a message for transmission to
each NP of each close peer of the other of the first and
second means

Claim 21 (emphasis added).

Instead, Hanson discusses “[m]aintaining a continuous virtual connection even though it may temporarily lose its actual physical connection,” as discussed above with respect to claim 1. In maintaining a continuous virtual connection, an MES may disconnect and then reconnect to a MMS. However, because of the nature of the client-server relationship between the MES and the MMS, the MMS never seeks out and attempts to re-connect to a MES. The MMS simply doesn't know the address of the MES, which has disconnected and reconnected with a new network address, and Hanson does not discuss a mechanism for the MMS to identify the address of a reconnected MES. Therefore, an MES reconnecting to an MMS, without the MMS similarly attempting to reconnect to the MES is not “*each of the first and second means ... addressing a message for transmission to each NP of each close peer of the other of the first and second means*” as recited in

Applicant's claim (emphasis added). Therefore, Hanson does not anticipate amended claim 21.

Applicant respectfully submits that claim 21 recites the elements previously recited in claim 24. Accordingly, Applicant respectfully submits that any subsequent Office Action (other than a Notice of Allowance) should remain Non-Final. *See* 37 CFR §1.113, MPEP §706.07(a).

For at least these reasons, claim 21 is allowable.

Claims 22, 23 and 25-30 depend from claim 21 and, are allowable by virtue of this dependency. Claims 22, 23 and 25-30 are also allowable for their own recited features, which the references of record have not been shown to disclose, teach, or suggest.

Conclusion

For at least the foregoing reasons, claims 1, 4-21, 23, and 25-30 are in condition for allowance. Accordingly, Applicant respectfully requests reconsideration and withdrawal of the rejections and prompt allowance of the subject application. If any issue remains unresolved that would prevent allowance of this case, Applicant respectfully requests that the Office contact the undersigned attorney to resolve the issue.

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